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From this table it is evident that all series follow the same general history, and that, at corresponding periods of the life cycle, all have about the same vigor, although the actual dates may range through all twelve months of the year.

The experiments thus show not only that waning vitality leading to old age and natural death is manifested by *Uroleptus mobilis*, but also, that conjugation between two individuals at any stage of waning vitality, leads to a complete restoration of vitality.

FALKLANDIA

By J. M. CLARKE

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Falklandia is a name herewith applied to a continental land which, during the Devonian period in the occidental parts of the Southern Hemisphere, preceded Gondwana-Land and Antarctis. The history of Gondwana-Land is well established (Neumayr, Suess); its supposed earliest outlines have been approximately determined by the study of its land flora (D. White). The conception of Gondwana-Land is that of a great east-west southern continent which escaped the turmoil of world-wide postcarboniferous deformations and which continued its existence as a continental asylum for land and stream life till late in the Mesozoic time (Cretaceous) when incursions of the sea began which led to its breakdown and demolition in the Tertiary. Eastern Brazil into Sao Paulo, southern Argentine and the north half of the Falkland Islands constitute its western fragments; South Africa, the lost Lemuria (from Madagascar to Ceylon), India and Australia indicate its western extent. Those who have been responsible for the determination of this continent and especially Suess, who has discussed it in much detail, have not recorded its existence prior to the Carboniferous. Antarctis likewise, another Southern 'asylum,' defined on the basis of its terrestrial life and never accurately delimited by its proponents as to the date of its origin, gives proof of like beginning of stabilization and perhaps also of length of endurance. The fossil woods discovered in the Beacon sandstone of South Victoria-Land by James Eights ninety years ago, and the fossils brought home in recent years by Andersson, Nordenskiöld, Amundsen, Shackelton and the men of Scott, tend to indicate that it was coexistent in time with Gondwana-Land.

Asylums, thought Suess, were to be defined by continuity in the succession of terrestrial life; it must be added, however, that security of such determinations can be given by the character of the life of the sea which washed the shores of such asylums. Gondwana-Land and Antarctis had a parallel existence in time, though a distinct one. Osborn's observations indicate the

breakdown of Antarctis in the Tertiary. Both Gondwana-Land and Ant-arctis had a far longer duration than any of the continents of today.

In the period immediately preceding the isolation of these continental masses they were united at the west; that is, in the occidental South Atlantic, the south polar land extended continuously into the land regions of the Gondwana Continent. This we know from the determinations of the Devonian strand lines in southern South America, the Falkland Islands and South Africa.

The Devonian of these latitudes is a unit both in life and in sedimentation. In this regard it is wholly unlike the Devonian of Eria, the east-west continent of the North, and it is a conclusion that is irrefragable on the basis of the intimate and refined analysis that such determinations require and have received. The haphazard observer may be blind to these radical distinctions, especially when basing interpretations upon a knowledge of the strand faunas of Eria. The known extent of these Southern Devonian shore faunas, as pointed out by the writer (*Fosseis Devonianos do Parana; Monographias, Vol. I, Servico Geol. e Mineral do Brazil, 1913*), indicates the union of the Gondwana and Ant-arctis continents throughout the Devonian. The extent of this Devonian land bridge across the Atlantic is clearly shown by the unity of shore faunas in South Africa, Sao Paulo, Argentine and Bolivia, and the indication is of a land composed of Paleozoic strata of still earlier date. This is Falklandia, the parent land asylum out of which, in Postcarboniferous time, western Gondwana and Ant-arctis were carved. The name is appropriately taken, for on the Falkland Islands the Devonian marine strata border the Gangamopteris (*Glossopteris*) beds of Gondwana-Land.

Other names which have been suggested for these pre-Gondwana austral lands have been founded on inadequate evidence. The "South Atlantic Island" of Frech indicated a Devonian land which had no connection with South Africa; Katzer imagined a north-south Devonian Atlantis running along the axis of the ocean, and Schwarz drew, with somewhat freer hand, his "Flabellites Land," as an undivided land mass along the Atlantic axis reaching from the north, and at the south spreading west and east to join Frech's "South Atlantic Island."

ON THE REAL FOLDS OF ABELIAN VARIETIES

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1. In this note we propose to find the number of real folds that an abelian variety of rank one may have and to establish some simple properties regarding their connectivity.